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10/500,082

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Shuichi Kitamura

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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

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1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/500,082	<b>Applicant(s)</b> KITAMURA ET AL.	
	<b>Examiner</b> MICHAEL M. BERNSHTEYN	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3,7,9,10 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,7,9,10 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action follows a response filed on January 7, 2009. No claims have been amended, cancelled or added.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 7, 2009 has been entered.
3. In view of the amendment(s) and remarks the rejection of claims 3, 9, 10 and 17 under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi et al. (JP 09-324096) in view of Hirata et al. (JP 2001-316491), and the rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi et al. in view of Hirata et al. as applied to claims 3, 9, 10 and 17 above and further in view of Nishiguchi et al. (JP 10-060207) have been withdrawn.
4. Applicant's arguments with respect to claims 3, 7, 9, 10, and 17 have been considered but are moot in view of the new ground(s) of rejection.
5. Claims 3, 7, 9, 10, and 17 are pending.

### ***Claim Rejections - 35 USC § 103***

6. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

7. Claims 3, 7, 9, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi et al. (JP 09-324096) in view of Nishiguchi et al. (JP 10-060207) and Hirata et al. (JP 2001-316491).

With regard to the limitations of claims 3 and 7, Nishiguchi'096 discloses a composition comprises a modified PVA resin having anionic groups (preferably carboxyl and/or sulfo groups) preferably in the amount of 2.0-40.0-mol% and a PVA resin having a degree of saponification of 70-99% and a degree of polymerization 200-8,000. The modified PVA resin having carboxylic groups is produced by Michael addition reaction with acrylonitrile or acrylamide and partly or fully hydrolyzing the reaction product, wherein the weight ratio of A/B is from 95:5 to 5:95, which is within the claimed range (abstract). Example 1 discloses a film formed from a composition comprising a mixture of 35 parts of a modified PVA having saponification degree of 96.3%, and 65 parts of a modified PVA having saponification degree of 71.1%. This film has mechanical strength, alkali-resistance, hygroscopicity and crack resistance and has dissolution rate; it is suitable to encapsulate chemical products (Table 1, page 4, [0038]-[0040]).

With regard to the limitation of claim 3, Nishiguchi'096 does not disclose that polyvinyl alcohol composition contains 0.1 to 50 parts by weight of trimethylolpropane as plasticizer (C).

With regard to the limitation of claim 3, Hirata discloses a polyvinyl alcohol based film containing a plasticizer such as glycerol, diglycerol, diethylene glycol, triethylene glycol, propylene glycol, trimethylolpropane, etc. These may be used singly or in combination of at least two (page 4, [0026]). The amount of the plasticizer to be mixed

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is preferably from 1 to 30 parts by weight per 100 parts by weight of the PVA, which is clearly within the claimed range (page 4, [0027]).

Therefore, all of the above plasticizers are functional equivalents and can be substituted by each other. Thus, Hirata recognizes the equivalency of glycerol, diglycerol or ethylene glycol used by Hishiguchi'096 and trimethylolpropane as a plasticizer for a polyvinyl alcohol resin. In the instant case the substitution of equivalents solvents requires no express motivation, as long as the prior art recognize equivalency, **In re Fount**, 213 USPQ 532 (CCPA 1982); **In re Siebentritt**, 152 USPQ 618 (CCPA 1967); **Graver Tank & Mfg. Co. Inc. V. Linde Air Products Co.** 85 USPQ 328 (USSC 1950), and a person skilled in the art would have found obvious to substitute glycerol, diglycerol or ethylene glycol used by Hishiguchi'096 for trimethylolpropane of Hirata in the adjusted amount based on their recognized equivalency and with the reasonable expectation of success, and thus to arrive at the subject matter of instant claim 3.

With regard to the limitations of claims 3 and 7, the combined teaching of Nishiguhci'096 and Hirata discloses that further the components can be mixed with fine particles (JP'096, page 3, [0022]), but it does not disclose that polyvinyl alcohol film further contains inorganic filler (B) having an average particle size of 1 to 10  $\mu\text{m}$ .

Nishiguchi'207 discloses a water-soluble film comprises (A) a modified polyvinyl alcohol and (B) preferably 2-20 wt. % (based on the component A) of fine powder such as clay which has less or equal to 150  $\mu\text{m}$  average particle diameter (abstract). Such class of insoluble or poorly soluble impalpable powder can include clay, kaolin, an aluminum hydroxide, a calcium carbonate, a titanium hydroxide, etc. (page 3, [0025]).

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate inorganic filler (fine powder) having an average particle diameter less or equal to 150  $\mu\text{m}$  as taught by Nishiguchi'207 into the combined Nishiguchi'096 and Hirata's polyvinyl alcohol film composition because all of such impalpable powder prevent the stickiness accompanying moisture absorption and its effect on film physical properties is suppressed (JP'207, page 3, [0026]), and thus to arrive at the subject matter of claims 3 and 7.

With regard to a ratio of storage modulus and a glass temperature instantly claimed in claim 3, the combined teaching of Nishiguchi'096, Nishiguchi'207 and Hirata is silent about it. However, in view of substantially identical polyvinyl alcohol composition between Nishiguchi'096, Nishiguchi'207 and Hirata and instant claim 3 (substantially identical polymerized monomers, plasticizer and its amount, degrees of hydrolysis and the difference in degree of hydrolysis within the claimed ranges, substantially identical method of the preparation of the final composition), it is the examiner position that Nishiguchi'096, Nishiguchi'207 and Hirata's polyvinyl alcohol composition possesses these properties. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. **In re Best** 195 USPQ 430, (CCPA 1977).

With regard to the limitations of claims 9, 10, and 17, Nishiguchi'096 discloses the usage of ethylene glycol, glycerol or diglycelol as plasticizers, and low-molecular weight polyethylene glycol, coloring agent, an alkaline substance, agricultural

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chemicals, etc. (page 3, [0026]-[0027]). All of the above compounds can be considered as chemicals.

Thus, the combination of Nishiguchi's and Hirata's references renders all instant claims *prima facie* obvious in view of absent of unexpected results commensurate in scope of claims.

### ***Response to Arguments***

8. Applicant's arguments filed on January 7, 2009 have been fully considered but they are not persuasive.

9. It appears that the focal applicant's argument resides in the contention that the denaturation PVA resin (component A) is a structurally modified PVA resin which should not be confused with the normal PVA resin. Nishiguchi'096 describes the denaturation PVA as "PVA having an anionic group." The anionic group may be a carboxyl group, a sulfone group, a phosphate group, etc. (paragraph [0013]). The anionic group is introduced into PVA by a so-called post-denaturation process that includes a Michael addition reaction (paragraph [0015]). Nishiguchi'096 further discloses that the PVA resin (component B) is an unmodified PVA resin. Therefore, Nishiguchi'096 is very clear in stating that these two kinds of resins are different in molecular structures, one being modified (having an additional anionic group) and one being unmodified (see Abstract). The amount of the modified PVA resin is at least 5%. In the present invention (claim 3), the PVA resin (A) is a mixture of a first PVA resin (a1) and a second PVA resin (a2). This composition is not the same as the PVA resin composition (component A + component

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B) of Nishiguchi'096. Page 6, lines 5-14 of the originally filed application specifies that the PVA resin (A) used in the present invention can be prepared by a know(n) method without any restriction. The resulted PVA resin is not a structurally modified PVA resin having an anionic group, because there is no post-denaturation process (e.g. a Michael addition reaction that introduces an anionic group into the PVA molecular structure) involved in preparing the PVA resin (either in PVA resin (a1) or in PVA resin (a2)) (page 2, 2<sup>nd</sup> paragraph through page 3, line 3).

Furthermore, Applicants contend that the claim language regarding the composition of the PVA resin (A), which corresponds to the specification on page 6, lines 5-14, cannot be reasonably interpreted by one of ordinary skill in the art as encompassing a structurally modified PVA resin having an anionic group (page 3, 1<sup>st</sup> paragraph).

10. The Examiner fully agrees with applicant's remarks that, at the Patent Office, in determining the scope and content of the prior art, the scope of the claimed invention must be clearly determined by giving the claims the "broadest reasonable interpretation consistent with the specification" *Phillips v. A WH Corp.* (Fed. Cir. 2005), and with the broadest reasonable interpretation, "claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art" *In re Wheeler* (Fed Cir. 2008) (page 4, 1<sup>st</sup> paragraph).

It is noted that as Applicants confirm, the originally filed application specifies that the PVA resin (A) used in the present invention can be prepared by a know(n) method without any restriction (page 6, lines 5-14). Thus, the disclosure and the claims, as a



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part of the disclosure, do not contain any limitations for preventing a usage of Nishiguchi'096 structurally modified PVA resin having an anionic group.

11. In response to applicant's argument that the Office is directed to applicant's Declaration under 37 CFR 1.132, filed on July 7, 2006, and response to the final Office Action of September 26, 2006, filed on December 26, 2006, that the PVA film of the present invention does not have a substantially identical polyvinyl alcohol composition as Nishiguchi'096 (page 4, 2<sup>nd</sup> paragraph), it is noted that as it was already mentioned in the previous Office action dated August 1, 2008, the Declaration under 37 CFR 1.132 filed on October 31, 2007 is insufficient to overcome the rejection of current claims 3, 7, 9, 10, and 17 under 35 U.S.C. 103(a) because the showing is not commensurate in scope with the claims.

12. In response to applicant's argument that Nishiguchi'096 does not disclose an inorganic filler (B) to be included in the polyvinyl alcohol film (page 4, 4<sup>th</sup> paragraph), please, see paragraph 7 of current Office action.

13. In response to applicant's argument that Nishiguchi'096 and Hirata are nonanalogous arts, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Examiner has to repeat again that, Nishiguchi'096 and Hirata's references are analogous art because they are from the same field of endeavor concerning water-soluble film comprises a polyvinyl alcohol and a plasticizer.

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It is noted that Hirata's reference was used only to show the equivalency of glycerol, diglycerol or ethylene glycol used by Hishiguchi'096 and trimethylolpropane as a plasticizer for a polyvinyl alcohol resin, which does not concern the number of used polyvinyl alcohol resin, their saponification degree, etc.

14. In response to applicant's argument that because the film composition of Nishiguchi'096 is different from that of the present invention (different PVA resin, with or without inorganic filler), a film of Nishiguchi'096 using trimethylolpropane as plasticizer is still not the same as the film of the present invention (pages 4-5, the bridging paragraph), the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

15. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "Nishiguchi'096 stresses that, in cold water, the film should completely dissolve in a short time; Hirata, on the other hand, pertains to a polyvinyl alcohol film that is suitable for a polarizing film, and emphasizes that the polarizing film must have extremely low water solubility, for example, when 100 cm<sup>2</sup> of such film is left to stand in 1 liter of water of 50°C for 4 hours, the dissolved amount of polyvinyl alcohol is only 1-100 ppm", page 5, 2<sup>nd</sup> paragraph) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael M. Bernshteyn/  
Examiner, Art Unit 1796

/M. M. B./

Examiner, Art Unit 1796

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